USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

Rapid Watershed Assessment
Salamonie Watershed

Rapid Watershed Assessments provide initial estimates of where conservation investments would best address the concerns of land owners, conservation districts, and community organizations and stakeholders. These assessments help land owners and local leaders set priorities and determine the best actions to achieve their goals.

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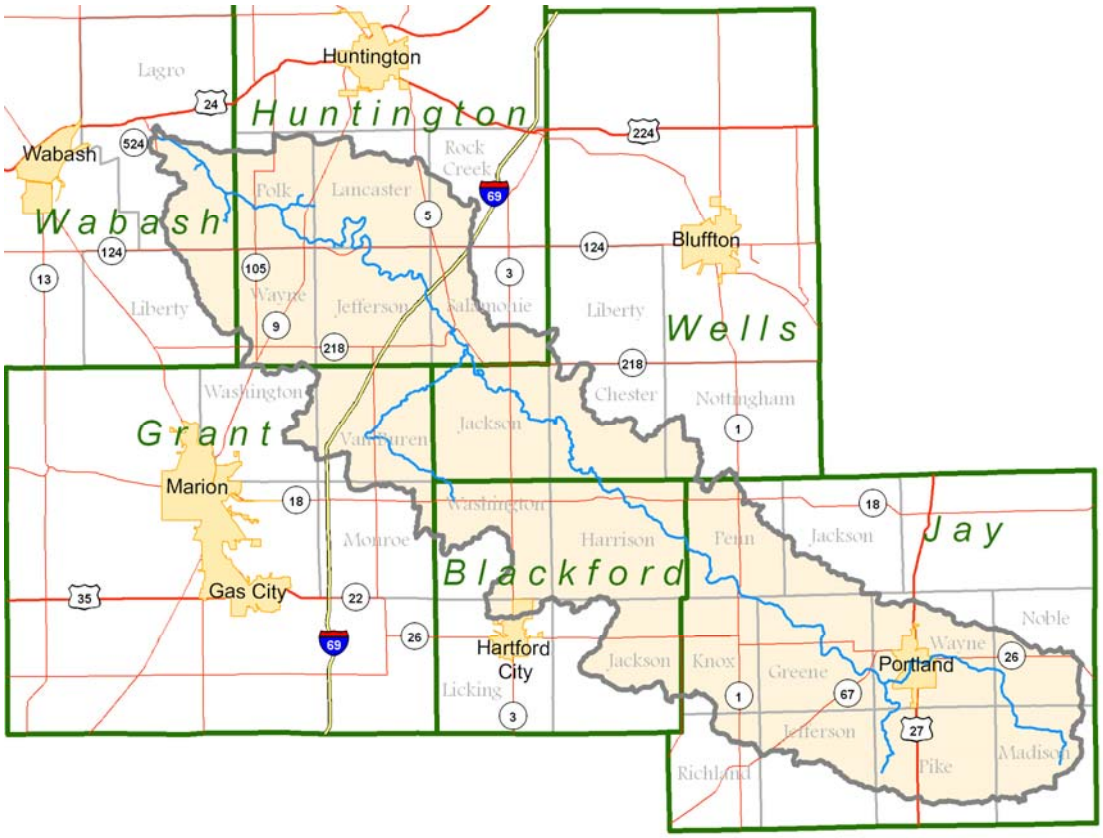
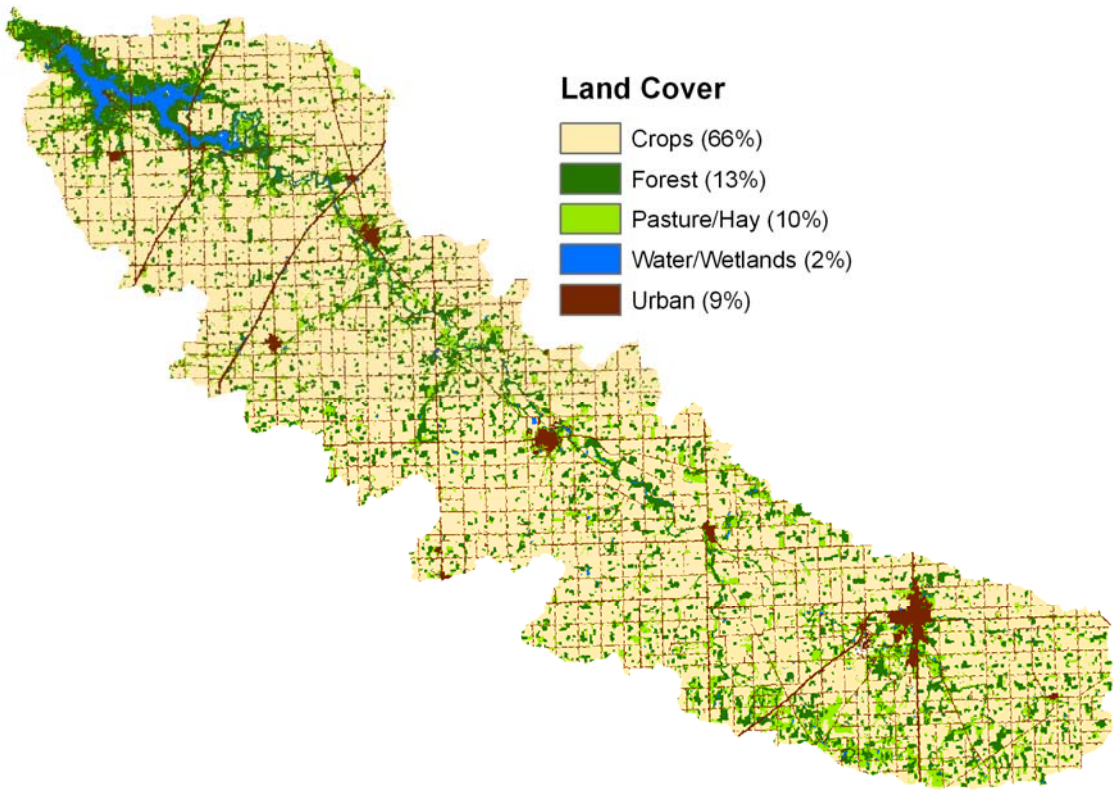


Introduction

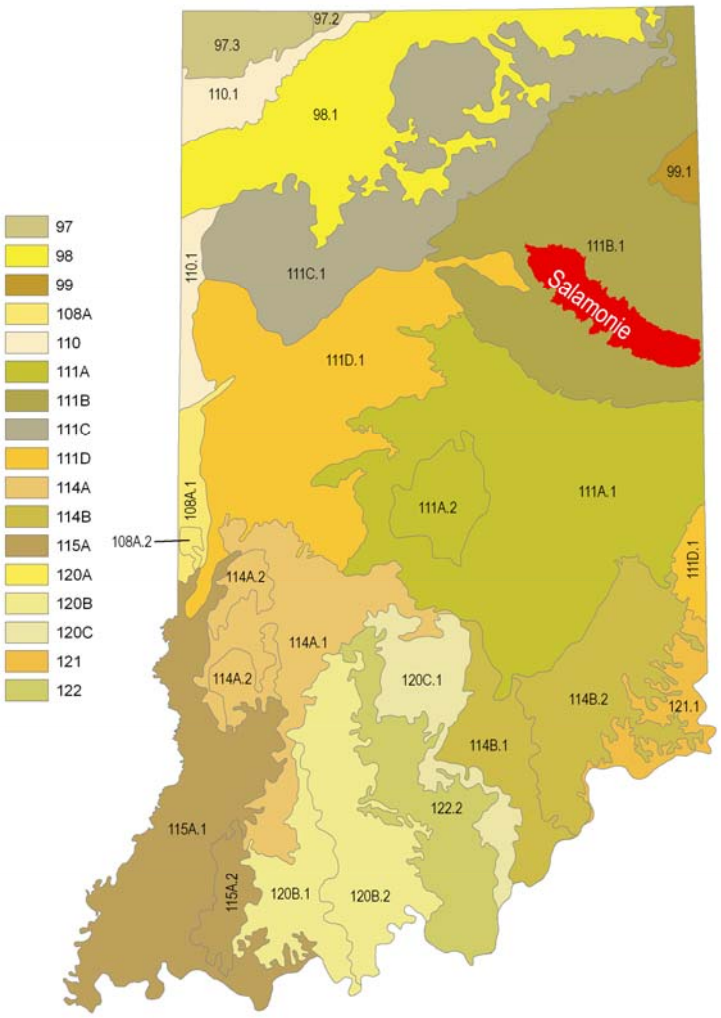
The Salamonie watershed is an eight digit (05120102) hydrologic unit code HUC) watershed located in the Northwester part of Indiana. The watershed drainage area is just over 352,900 acres. The watershed covers six different Indiana counties. It is subdivided into 23 subbasins represented on the map by 12 digit HUCs (Figure 2-1). The Salamonie River originates near the Indiana-Ohio border in Jay County, Indiana, and flows to the northwest for approximately 60 miles before discharging into the Wabash River just upstream from the town of Wabash, Indiana.



Common Resource Area

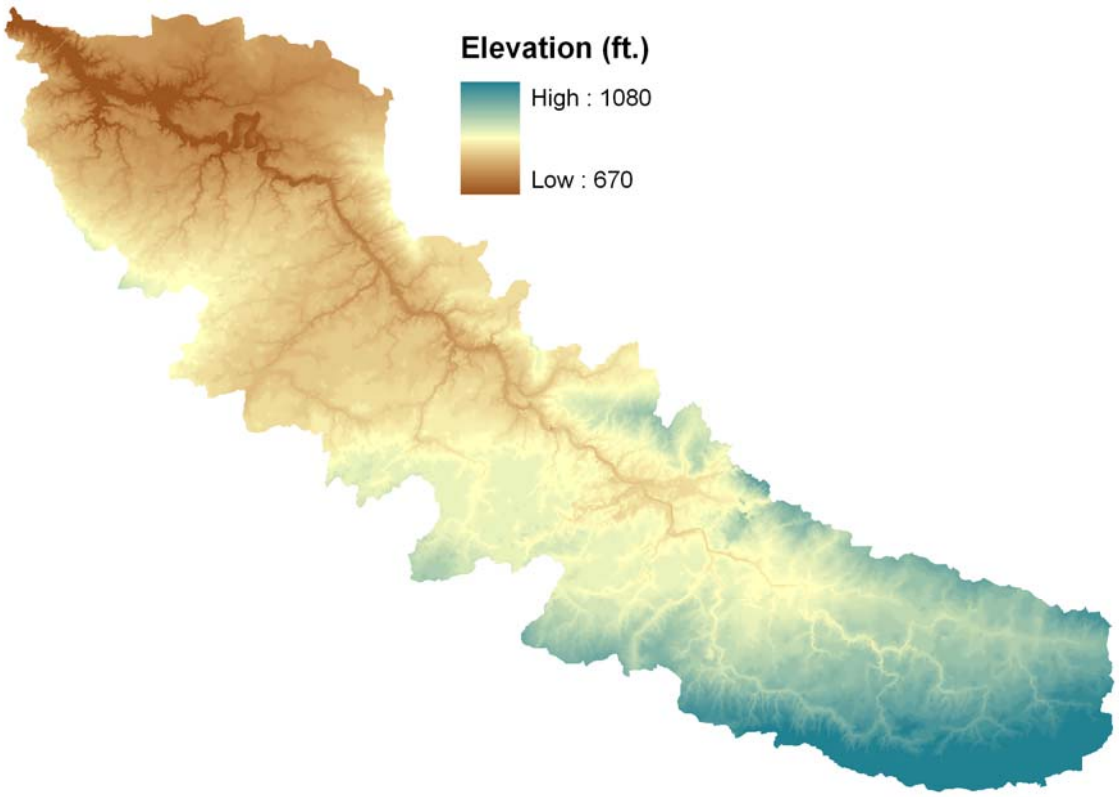
There are three common resource areas in the watershed:

The Indiana and Ohio Till Plain, Northeastern Part – (111B.1). Broad, level clayey till plain with some end moraines, lake basins, and sand and gravel outwash. Extensive corn, soybean, wheat, and livestock farming on artificially drained soils with scattered woodlots. Soils are well drained to very poorly drained, formed in Wisconsin Age glacial drift derived mostly from limestone and dolomite.

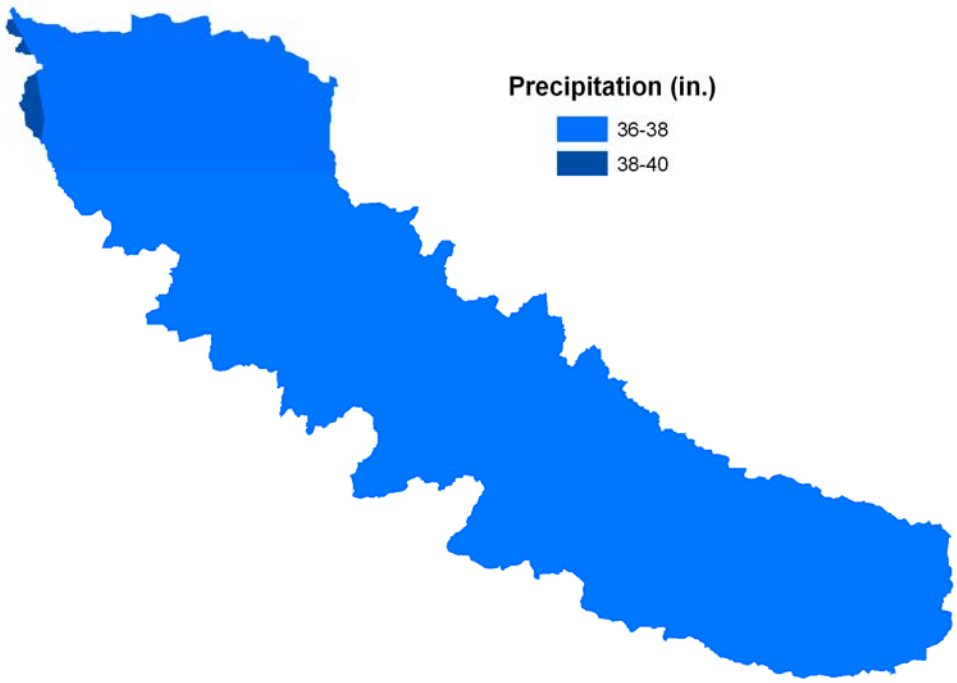


Physical Description

The Salamonie watershed is an eight digit (05120102) hydrologic unit code HUC) watershed located in the Northwester part of Indiana. The watershed drainage area is just over 352,900 acres. The watershed covers six different Indiana counties. It is subdivided into 23 subbasins represented on the map by 12 digit HUCs (Figure 2-1). The Salamonie River originates near the Indiana-Ohio border in Jay County, Indiana, and flows to the northwest for approximately 60 miles before discharging into the Wabash River just upstream from the town of Wabash, Indiana. The lower portion of the Salamonie River is impounded and forms Salamonie Lake. The name Salamonie was derived from the Native American word "O-sah-mo-nee," which means "yellow paint." Native Americans made yellow paint from the bloodroot plant which grew in great abundance along the winding banks of the river (IDNR 1999).



Assessment of waters
Section 303(d) of the Clean Water Act requires states to identify waters that do not meet, or are not expected to meet, applicable water quality standards. The Clean Water Act Section 303(d) list for Indiana provides a basis for understanding the current status of water quality in the Driftwood Watershed.



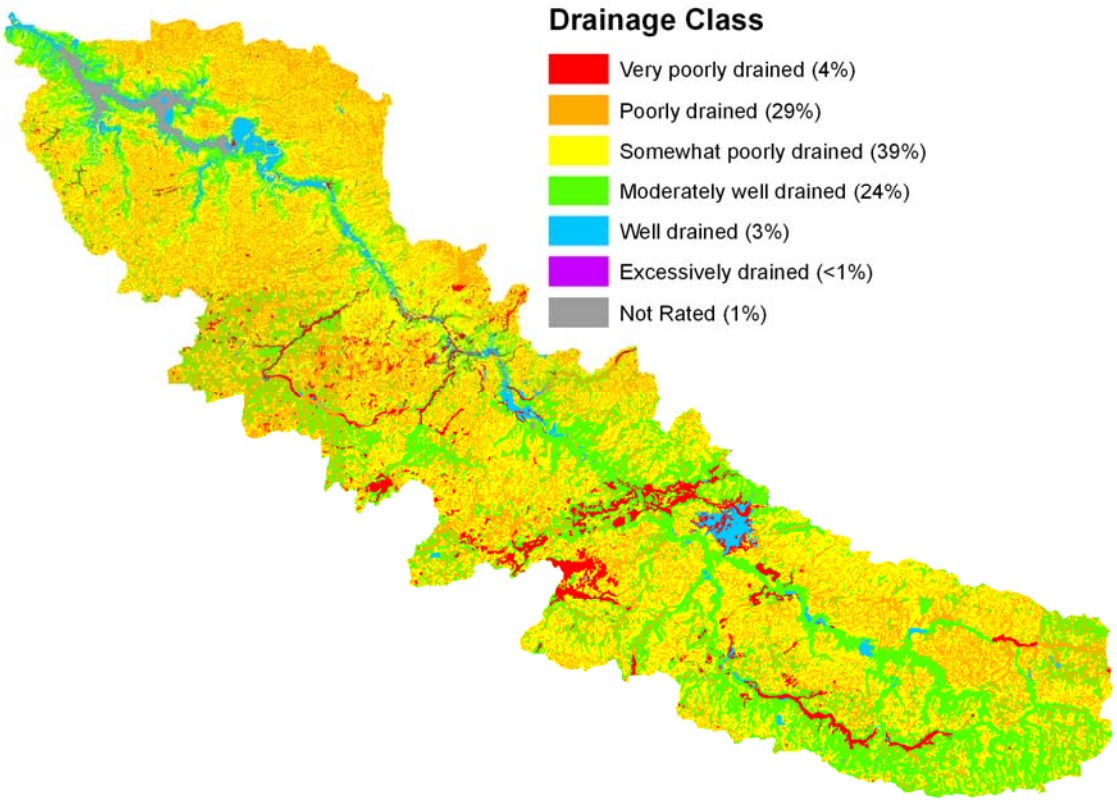
WATERBODY SEGMENT ID	WATERBODY SEGMENT NAME	CAUSE OF IMPAIRMENT
INB0241_T1001	DETAMORE DITCH	IMPAIRED BIOTIC COMMUNITIES
INB02P1009_00	HOMINY RIDGE LAKE	FCA for MERCURY
INB0244_00	MAJENCIA CREEK - HEADWATERS	IMPAIRED BIOTIC COMMUNITIES
INB0244_00	MAJENCIA CREEK - HEADWATERS	NUTRIENTS
INB0233_00	SALAMONIE RIVER	E. COLI
INB0224_00	SALAMONIE RIVER - EAST CREEK	E. COLI
INB0216_00	SALAMONIE RIVER - MILLER DITCH	CHLORIDES
INB0216_00	SALAMONIE RIVER - MILLER DITCH	CYANIDE
INB0216_00	SALAMONIE RIVER - MILLER DITCH	E. COLI
INB0231_00	SALAMONIE RIVER - RHOTON DITCH	E. COLI
INB0242_T1002	SALAMONIE RIVER-LANCASTER	E. COLI

Soils

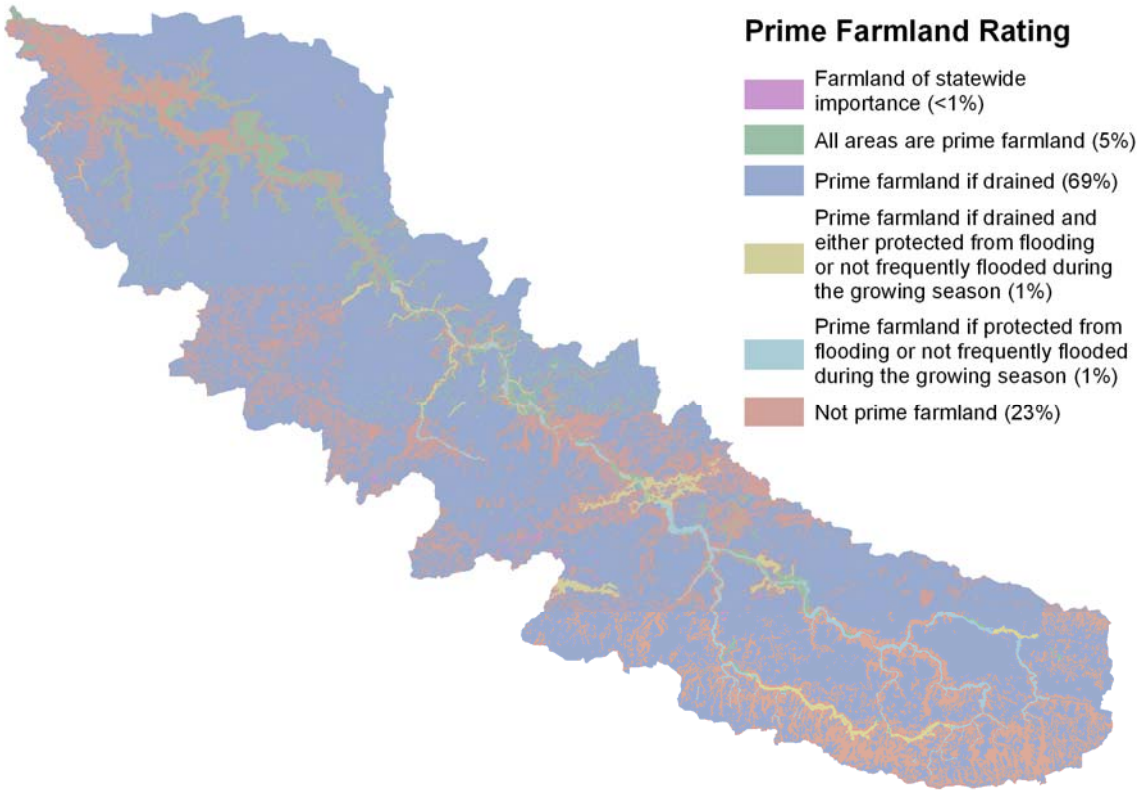
The dominant soil orders in MLRA (111B.1) are Alfisols, Inceptisols, and Mollisols. The soils in the area have a mesic soil temperature regime, an aquic or udic soil moisture regime, and mixed or illitic mineralogy. They are very deep, generally are very poorly drained to somewhat poorly drained, and are loamy or clayey. The dominant kinds of parent material are clayey till and lacustrine sediments. Others include outwash, alluvium, loess, and organic deposits. Hapludalfs (Glynwood and Morley series), Epiaqualfs (Blount, Nappanee, and Pandora series), Endoaqualfs (Wetzel series), and Argiaquolls (Pewamo series) are on till plains. Endoaquolls (Milford and Montgomery series) and Epiaqualfs (Del Rey series) are on lake plains. Haplosaprists (Houghton and Linwood series), Humaquepts (Roundhead and Wallkill series), and Endoaquepts (Wunabuna series) are in deep depressions or potholes. Hapludalfs (Belmore, Eldean, and Fox series), Endoaqualfs (Sleeth series), and Argiaquolls (Millgrove, Rensselaer, and Westland series) are on terraces and outwash plains. Eutrudepts (Genesee series), Endoaquepts (Shoals series), and Endoaquolls (Saranac and Sloan series) are on flood plains.

Drainage Classification

Drainage class (natural) refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized–excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."



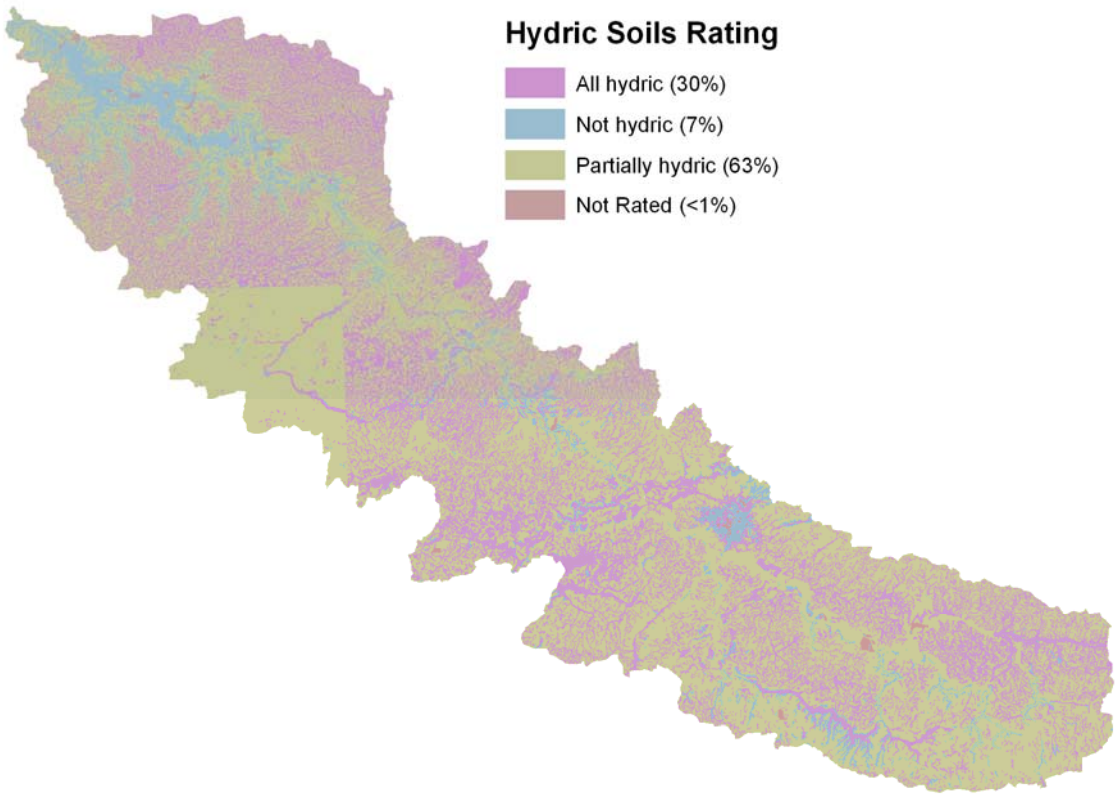
Farmland Classification Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the Federal Register, Vol. 43, No 21, January 31, 1978.



Hydric Soils This rating provides an indication of the proportion of the map unit that meets criteria for hydric soils. Map units that are dominantly made up of hydric soils may have small areas, or inclusions of non-hydric soils in the higher positions on the landform, and map units dominantly made up of non–hydric soils may have inclusions of hydric soils in the lower positions on the landform.

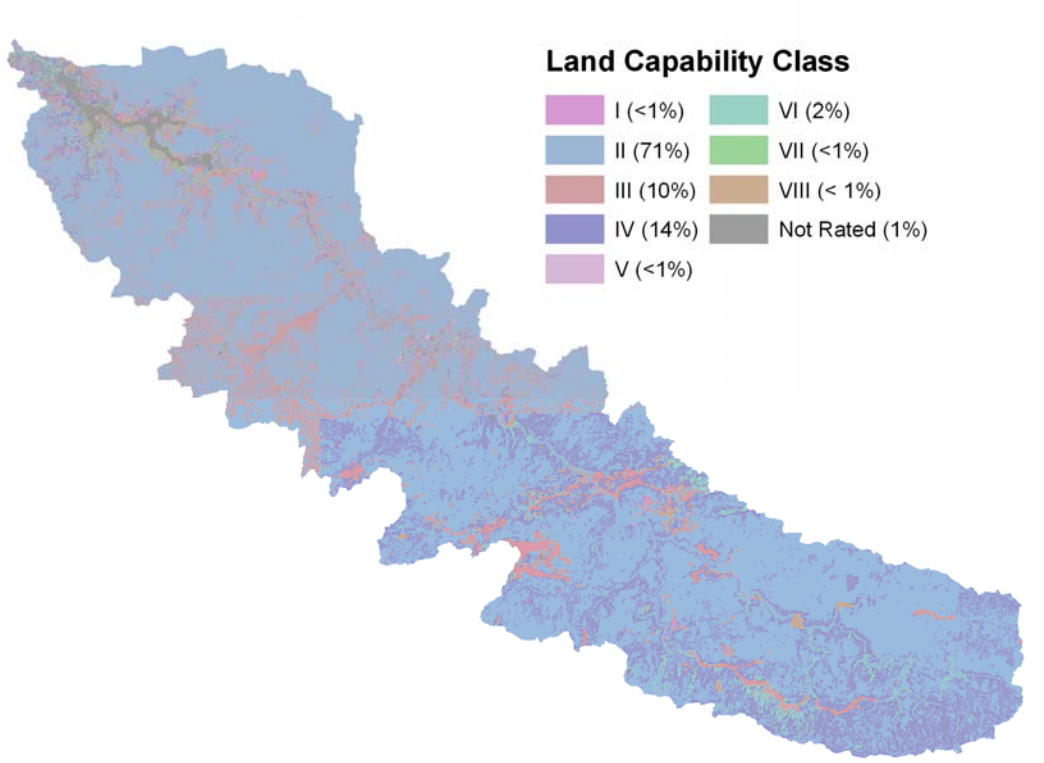
Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make on site determinations of hydirc soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 2002).



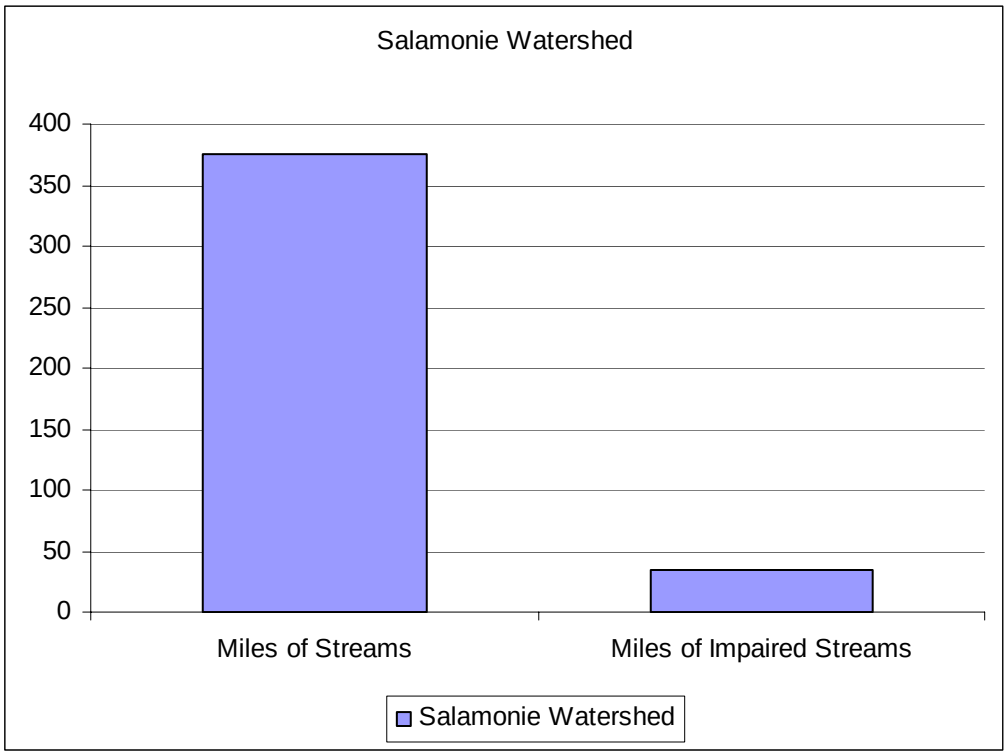
Highly Erodible Land (HEL)
A soil map unit with an erodibility index (EI) of 8 or greater is considered to be highly erodible land (HEL). The EI for a soil map unit is determined by dividing the potential erodibility for the soil map unit by the soil loss tolerance (T) value established for the soil in the FOTG as of January 1, 1990. Potential erodibility is based on default values for rainfall amount and intensity, percent and length of slope, surface texture and organic matter, permeability, and plant cover. Actual erodibility and EI for any specific map unit depends on the actual values for these properties.

Land Capability Classification
Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive land forming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

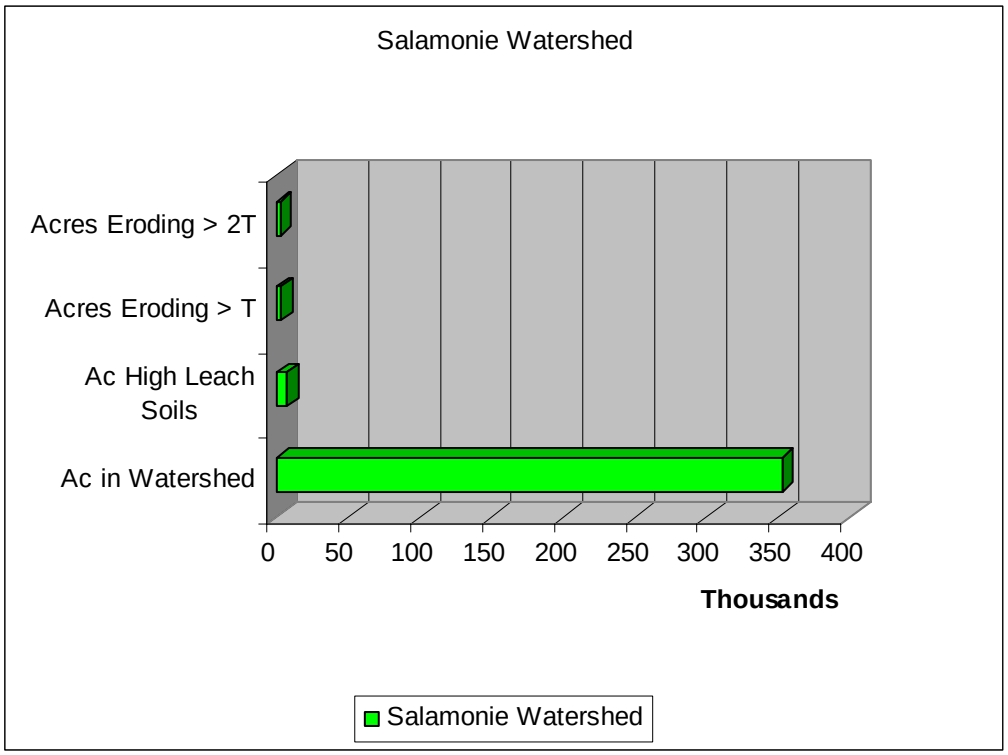


Resource Concerns
Stakeholders and electronic analysis have been identified the following resource concerns as being the top priority:

- Surface Water Quality – There is approximately 9 percent or 34 miles of the 377 total miles of the streams within the watershed that have identified impairments. Excessive amounts of sediments, nutrients, and bacteria degrade the water quality causing an unbalanced fish community with depressed populations and limited diversity.

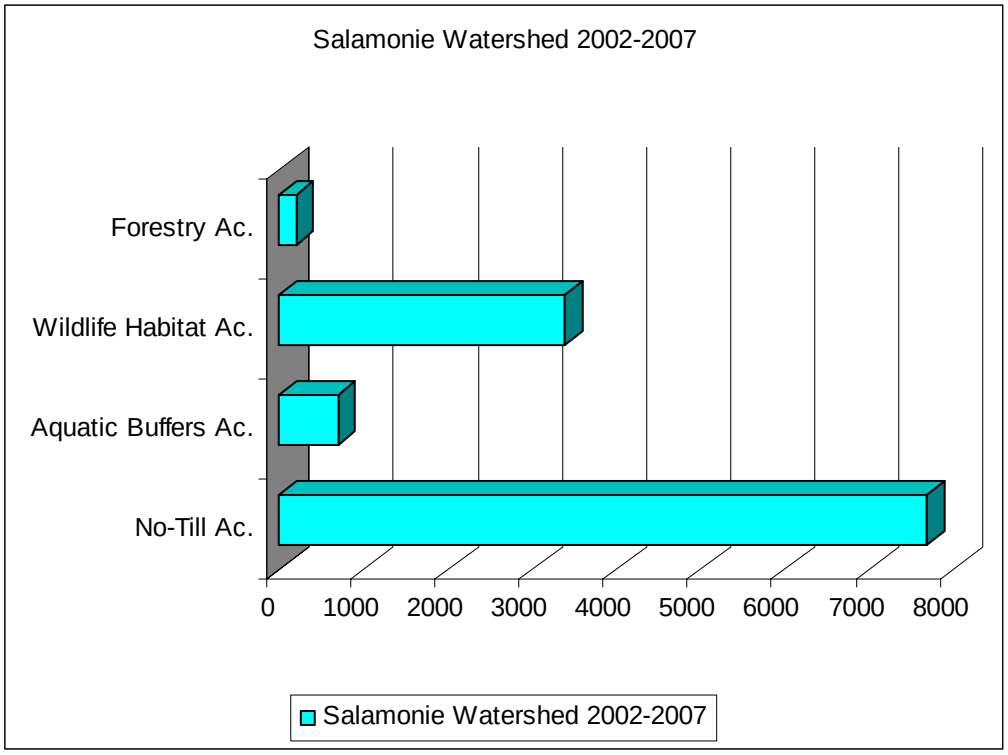


- Ground Water Quality - The watershed has in excess of 7,150 acres of soils with high leaching index (> 10) which allows containments on the land surface to be carried easily into the ground water from infiltrating water. There are an additional 2,700 acres of wellhead protection areas. Because of this condition, non–point pollutants such as fertilizers, pesticides, and livestock waste have the potential to contaminate the ground water aquifer.
- Threatened & Endangered Species – Just over 13.9 percent of the 352,900 acres in the watershed lie within the range of know Threatened and Endangered Species.



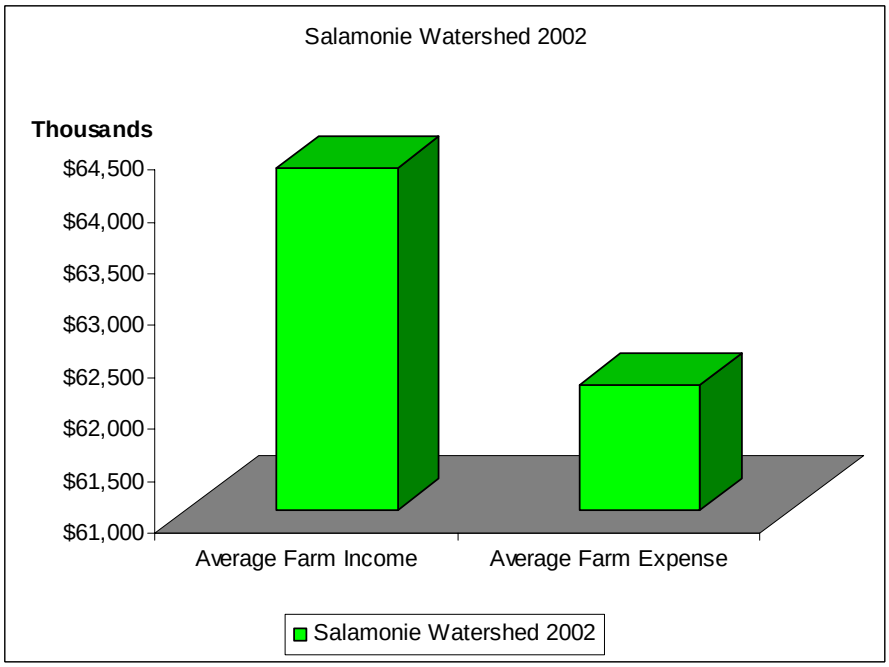
- Soil Quality – The watershed has over 3,600 acres of soils subject to soil erosion. There is over 2,400 acres eroding at twice the tolerable level or "T". There are also some 400 acres within the watershed that are subject to wind erosion.

Performance Results System and Other Data
The producers within the watershed have implemented a variety of conservation practices over the past five years.



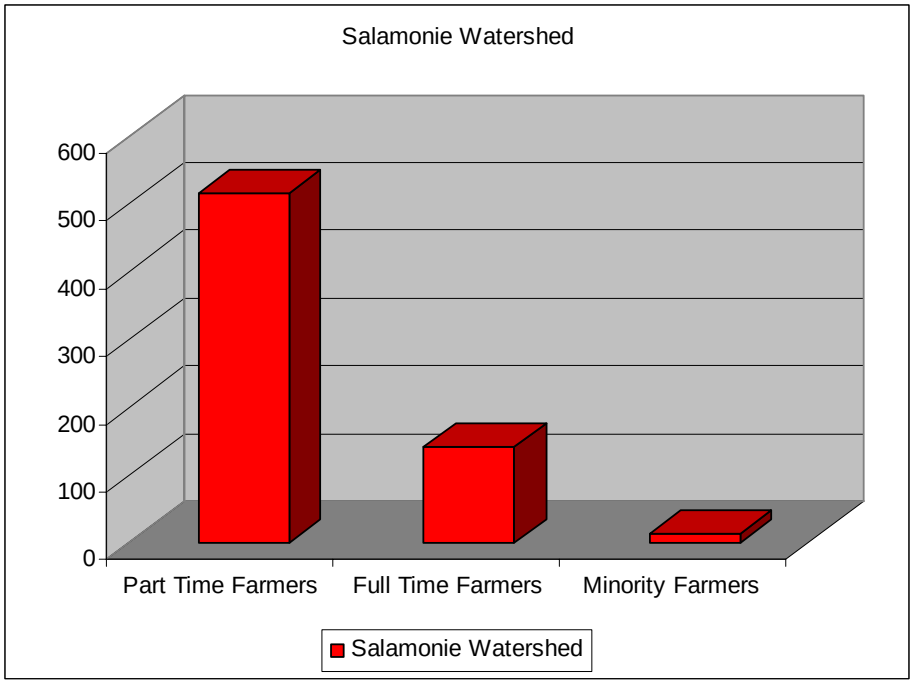
Since 2002 through 2007 landowners have implemented over 7,700 acres of No-Till, approximately 9,400 feet of upland buffers, and just over 700 acres of aquatic buffers. Wildlife habitat has been improved or established on more than 3,400 acres within the watershed and just over than 200 acres of forestry practices have been applied.

Census and Social Data (Relevant)
There are approximately 3,839 farms in the watershed that average approximately 305 acres in size.



The 2002 average farm total income for all the counties was $64,300,000 while average expense was $62,200,000.

There are approximately 516 part time farmers, 140 full time farmers and 12 minority farmers.



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Data Sources:

Indiana Common Resource Area (CRA) Map delineations are defined as geographical areas where resource concerns, problems, or treatment needs are similar. It is considered a subdivision of an existing Major Land Resource Area (MLRA) map delineation or polygon. Landscape conditions, soil, climate, human considerations, and other natural resource information are used to determine the geographic boundaries of a CRA.

Indiana Agricultural Statistics 2003 – 2004 - Indiana Agricultural Statistics, 1435 Win Hentshcel Blvd., Suite B105, West Lafayette

Major Land Resource Area Map Tool - Indiana NRCS Soils Page - http://www.in.nrcs.usda.gov/mlra11/soils.html

Indiana Hydrologic Units Indiana Geodata

Indiana Watershed Action Strategy Plan

Indiana Rapid Watershed Assessment (Electronic Data Sets – Web based application.

Indiana 2006 303d List – Indiana Department of Agriculture, Division of Natural Resources